

SEQUENCE LISTING

<110> ACTINOVA LTD

<120> STREPTOCOCCAL ABC TRANSPORTER PROTEIN

<130> KCO1004US

<150> GB 9828880.6

<151> 1998-12-31

<160> 9

<170> PatentIn Ver. 2.1

<210> 1

<211> 893

<212> DNA

<213> Streptococcus pyogenes

<220>

<221> CDS

<222> (1)..(861)

<400> 1

tcg tcg act ggc gct aaa act gct aag agt gat aaa tta aaa gtc gtg
48

Ser Ser Thr Gly Ala Lys Thr Ala Lys Ser Asp Lys Leu Lys Val Val
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gca acc aat tca att att gcc gac atg aca aaa gct att gct ggt gat
96

Ala Thr Asn Ser Ile Ile Ala Asp Met Thr Lys Ala Ile Ala Gly Asp
20 25 30

aaa atc gat ctg cac agc att gtg cca atc ggt caa gac cct cat gag
144

Lys Ile Asp Leu His Ser Ile Val Pro Ile Gly Gln Asp Pro His Glu
35 40 45

tac gaa cca tta cca gaa gat gct gaa aaa aca agt aat gct gat gtg
192

Tyr Glu Pro Leu Pro Glu Asp Ala Glu Lys Thr Ser Asn Ala Asp Val
50 55 60

att ttc tat aat ggt atc aat cta gaa gat ggc ggg caa gct tgg ttc
240

Ile Phe Tyr Asn Gly Ile Asn Leu Glu Asp Gly Gly Gln Ala Trp Phe
65 70 75 80

acc aaa cta gtg aaa aat gct caa aaa acg aaa aac aaa gat tac ttt
288

Thr Lys Leu Val Lys Asn Ala Gln Lys Thr Lys Asn Lys Asp Tyr Phe
85 90 95

gcc gtg tct gat ggc att gat gtg att tac ttg gaa ggt gca agc gaa
 336
 Ala Val Ser Asp Gly Ile Asp Val Ile Tyr Leu Glu Gly Ala Ser Glu
 100 105 110

 aaa gga aaa gaa gat cca cat gct tgg tta aat ctc gaa aac gga atc
 384
 Lys Gly Lys Glu Asp Pro His Ala Trp Leu Asn Leu Glu Asn Gly Ile
 115 120 125
 att tat tca aaa aac att gcc aaa caa ttg att gca aag gat cct aaa
 432
 Ile Tyr Ser Lys Asn Ile Ala Lys Gln Leu Ile Ala Lys Asp Pro Lys
 130 135 140
 aac aaa gaa act tat gaa aag aac cta aaa gct tat gtg gct aaa ttg
 480
 Asn Lys Glu Thr Tyr Glu Lys Asn Leu Lys Ala Tyr Val Ala Lys Leu
 145 150 155 160
 gaa aaa cta gac aaa gaa gcc aaa tca aaa ttt gat gct att gca gaa
 528
 Glu Lys Leu Asp Lys Glu Ala Lys Ser Lys Phe Asp Ala Ile Ala Glu
 165 170 175
 aat aaa aaa ttg att gtg act agt gaa ggc tgc ttc aag tac ttt tca
 576
 Asn Lys Lys Leu Ile Val Thr Ser Glu Gly Cys Phe Lys Tyr Phe Ser
 180 185 190
 aaa gct tac ggt gtc cca tct gct tat atc tgg gaa att aac acc gaa
 624
 Lys Ala Tyr Gly Val Pro Ser Ala Tyr Ile Trp Glu Ile Asn Thr Glu
 195 200 205
 gaa gaa gga aca cca gat caa att tca tca ttg att gaa aaa cta aaa
 672
 Glu Glu Gly Thr Pro Asp Gln Ile Ser Ser Leu Ile Glu Lys Leu Lys
 210 215 220
 gtc atc aag cca tct gcg ctt ttt gta gag tca agt gtc gat aga cgc
 720
 Val Ile Lys Pro Ser Ala Leu Phe Val Glu Ser Ser Val Asp Arg Arg
 225 230 235 240
 cct atg gaa act gtt tct aaa gat agt ggt att cct att tat tct gag
 768
 Pro Met Glu Thr Val Ser Lys Asp Ser Gly Ile Pro Ile Tyr Ser Glu
 245 250 255
 atc ttt aca gat tca att gct aaa aaa ggt aaa cct ggc gat agt tat
 816
 Ile Phe Thr Asp Ser Ile Ala Lys Lys Gly Lys Pro Gly Asp Ser Tyr
 260 265 270
 tat gct atg atg aaa tgg aac ctt gac aaa att tct gaa ggt cta
 861
 Tyr Ala Met Met Lys Trp Asn Leu Asp Lys Ile Ser Glu Gly Leu
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 893

<210> 2
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 <212> PRT
 <213> Streptococcus pyogenes

<400> 2

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Lys	Ile	Asp	Leu	His	Ser	Ile	Val	Pro	Ile	Gly	Gln	Asp	Pro	His	Glu
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Tyr	Glu	Pro	Leu	Pro	Glu	Asp	Ala	Glu	Lys	Thr	Ser	Asn	Ala	Asp	Val
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Ile	Phe	Tyr	Asn	Gly	Ile	Asn	Leu	Glu	Asp	Gly	Gly	Gln	Ala	Trp	Phe
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Thr	Lys	Leu	Val	Lys	Asn	Ala	Gln	Lys	Thr	Lys	Asn	Lys	Asp	Tyr	Phe
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Ala	Val	Ser	Asp	Gly	Ile	Asp	Val	Ile	Tyr	Leu	Glu	Gly	Ala	Ser	Glu
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Lys	Gly	Lys	Glu	Asp	Pro	His	Ala	Trp	Leu	Asn	Leu	Glu	Asn	Gly	Ile
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Ile	Tyr	Ser	Lys	Asn	Ile	Ala	Lys	Gln	Leu	Ile	Ala	Lys	Asp	Pro	Lys
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Asn	Lys	Glu	Thr	Tyr	Glu	Lys	Asn	Leu	Lys	Ala	Tyr	Val	Ala	Lys	Leu
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Glu	Lys	Leu	Asp	Lys	Glu	Ala	Lys	Ser	Lys	Phe	Asp	Ala	Ile	Ala	Glu
			165					170					175		
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			180				185						190		
Lys	Ala	Tyr	Gly	Val	Pro	Ser	Ala	Tyr	Ile	Trp	Glu	Ile	Asn	Thr	Glu
		195					200					205			
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Val	Ile	Lys	Pro	Ser	Ala	Leu	Phe	Val	Glu	Ser	Ser	Val	Asp	Arg	Arg
225					230					235				240	
Pro	Met	Glu	Thr	Val	Ser	Lys	Asp	Ser	Gly	Ile	Pro	Ile	Tyr	Ser	Glu
				245					250				255		
Ile	Phe	Thr	Asp	Ser	Ile	Ala	Lys	Lys	Gly	Lys	Pro	Gly	Asp	Ser	Tyr
			260					265					270		
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 <212> DNA
 <213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR primer

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<210> 4
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR primer

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<210> 5
<211> 17
<212> PRT
<213> Streptococcus pyogenes

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Asn

<210> 6
<211> 19
<212> PRT
<213> Streptococcus pyogenes

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Ile Glu Lys

<210> 7
<211> 16
<212> PRT
<213> Streptococcus pyogenes

<400> 7
Glu Ser Ser Val Asp Arg Arg Pro Met Glu Thr Val Ser Lys Asp Ser
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<210> 8

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<211> 21
<212> PRT
<213> Streptococcus pyogenes

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Met Met Lys Trp Asn
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<210> 9
<211> 13
<212> PRT
<213> Streptococcus pyogenes

<400> 9
Gln Asp Pro His Glu Tyr Glu Pro Leu Pro Glu Asp Val
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